ALADWAA Gem

2026

SCIENCE

نماذج اختبارات الأضواء

لشهـــر مارس

الصف 2 الإعدادى

الفصل الدراسى الثانى

موقع الدكتور محمد رزق معلم الكيمياء التعليمي D.M.RAZK

1- A) Complete the following sentences:

1. In chemical reactions, the process of breaking bonds represents an ..... reaction, while the process of the forming new bonds represents an ..... reaction.
2. Luminous insects emit light from the abdominal area as a result of an ..... occurring inside their bodies.

B) Give a reason for:

1. When anhydrous lithium chloride dissolves in water, the temperature of the water rises.

.....

2. Water is not used in extinguishing petroleum oil fires.

.....

3. The bag placed on the table remains stationary unless someone moves it from its place.

.....

2- A) Answer the following questions:

1. What is the importance of self-heating cans?

.....

.....

2. The ignition point of substance (X) is 45°C and the ignition point of substance (Y) is 300°C. **Which substance ignites faster? Explain.**

.....

.....

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

B) Choose the correct answer:

1. Which of the following represents an endothermic process?

a) Condensation. b) Melting. c) Freezing. d) Deposition.

2. A person tries to push a box with a mass of 40 kg across a rough horizontal surface, but he is unable to do so, the net force acting on the box is equal to ..... .

a) zero b) 20 N c) 40 N d) 500 N

3. Reaction of metals with dilute acids is similar thermally to ..... .

a) melting ice b) water evaporation

c) Thermite reacion d) Sublimation of iodine

3- A) Give an example of each:

1. Biofuel.

.....

2. endothermic reaction.

.....

B) What happens…?

1. To the flask and piece of wood when mixing barium hydroxide with ammonium chloride.

.....

2. When a collision occurs between two moving objects having the same mass and the same speed in opposite directions.

.....

3. Adding drops of Glycerine to potassium permanganate powder.

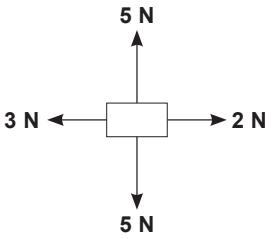
.....

.....

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

1- A) Choose the correct answer:

1. From the opposite figure, the net force ..... .



a) balanced equal 1 N

b) unbalanced equal 5 N to the right

c) balanced equal 5 N

d) unbalanced equal 1 N to the left

2. When (1 g) of lithium chloride dissolves in water, the initial temperature T1 is 21˚C and the final temperature is 25.5 ˚C, what is the amount of ΔT when (2g) is dissolved in the same amount of water?

a) 5.4 ˚C b) 9 ˚C c) 3.5 ˚C d) 52.2 ˚C

B) What happens when…?

1. The bond energy of the molecules of the reactants increases. **(In terms of bond breaking)**

.....

2. Passing the hot freon gas through the pipe network located behind the refrigerator.

.....

3. Adding water droplets to anhydrous cobalt chloride. **(Regarding: color change)**

.....

2- A) Answer the following questions:

1. Calcium oxide reacts with water, according to the following thermochemical equation:

$$(CaO + H_2O \longrightarrow Ca(OH)_2 + Heat)$$

a) **What is the type of reaction (endothermic or exothermic)? Explain.**

.....

.....

b) **Which is greater:** the absorbed energy during breaking bond or the released energy during forming bonds?

.....

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

2 Identify the odd item, then state the connection between the others:

1) Natural gas – Ethanol – Coal – Petroleum oil.

.....

2) Sodium hydroxide – Sodium carbonate – Sodium bicarbonate – calcium chloride.

.....

3) Fuel – Oxygen – Water – Heat.

.....

3- A) Study the opposite reaction, then determine:

$$Mg + CuO \xrightarrow{\Delta} MgO + Cu$$

1 the oxidizing agent.

.....

2 the reducing agent .

.....

B) Give a reason for:

1 Rushing the bus passengers forward when the bus stops suddenly.

.....

.....

2 Difference in colors of Bunsen flame.

.....

3 Iron produced from the thermite reaction is in the form of melting iron.

.....

.....

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

1- A) Put (✓) or (✗):

1. The temperature of the oxyacetylene flame reaches 2000˚C and is used for cutting metals. ( )
2. Anhydrous substances change into hydrated substances by heating. ( )

B) Give a reason for:

1. Mass is a scalar physical quantity.

.....

2. When a matchstick is struck against a rough surface, it ignites.

.....

.....

3. When barium hydroxide powder is added to ammonium chloride powder, the temperature of the surroundings decreases.

.....

.....

2- A) What happens when...?

1. Inserting a copper rod and a zinc rod that are connected to the LED bulb into a lemon.

.....

.....

2. Passing a stream of hydrogen gas over black copper oxide with heating.

.....

B) Correct the underlined word:

1. In the opposite reaction $2Mg + O_2 \longrightarrow 2MgO$, <u>oxygen</u> acts as a reducing agent. (.....)
2. In drones, the downward push of air from the engines represents the <u>reaction force</u>. (.....)
3. The self-heating cans contain calcium <u>hydroxide</u> and water. (.....)

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

3- A) Mention the importance or use of each of the following:

1. Instant hot compresses

.....

2. Thermite reaction

.....

B) Answer the following questions:

1. **What is meant by:** Heat of dissolution?

.....

.....

2. **Look at the opposite figure, then answer:**

Which of these candles will go out first? Explain.

(A) (B)

.....

.....

3. A net force acted on an object with a mass of 5 kg, causing it to move with an acceleration of 2 m/s^2. **Calculate the net force.**

.....

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

1- A) Write the scientific term:

1. The property of objects maintaining their state of rest or motion unless acted upon by external forces. (.....)
2. The ignition of materials without the presence of an external source of heat. (.....)

B) first: What is the meant by...?

1. Law of conservation of energy.

.....

.....

2. Reduction process.

.....

.....

second: What is the importance of :the seat belt in the car?

.....

.....

2- A) Give a reason for:

1. When diluting concentrated sulphuric acid, the acid is dripped onto the inner walls of the water container.

.....

2. The motorcycle rider is rushed forward when motorcycle collides with a barrier.

.....

B) Complete the following sentences:

1. ..... reactions release heat energy, while ..... reactions absorb energy.
2. The mixture of propane and ..... is known as butagas.
3. ..... and ..... are factors that affect the acceleration of a moving object.

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

3- A) What happens when….?

1. The net force acting on an object is doubled and its mass is decreased to half.
(in terms of acceleration)

.....

2. Water is used in extinguishing of petroleum oil fires.

.....

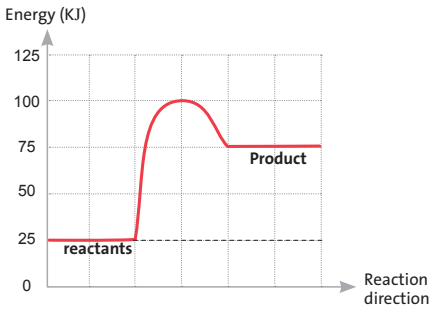
B) Answer the following:

1. **Look at the opposite figure, then answer:**

a) What is the type of this reaction according to thermal changes?

.....

b) Calculate the amount of energy released during the formation of products.



.....

2. **Compare between:** Exothermic dissolution and endothermic dissolution.
(in terms of: definition – give one example)

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D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

1- A) Put (✓) or (✗):

1. Hydrated copper sulphate is bonded with 6 water molecules. ( )
2. The process formation of new bonds in products needs absorption of energy. ( )

B) Mention the importance of...:

1. Instant cold compresses.

.....

2. Spark plugs.

.....

.....

3. Fire extinguishers.

.....

2- A) Answer the following questions:

1. In the opposite reaction: $PbO_2 + 2H_2 \longrightarrow Pb + 2H_2O$

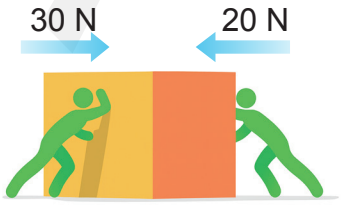
Identify the oxidizing agent and the reducing agent in this reaction.

.....

2. **Look at the opposite figure, then answer:**

a) Determine the type of force acting on the box (balanced - unbalanced)?

.....



B) Calculate the net force?

.....

B) Complete the following sentences:

1. When hydrated copper sulphate is heated, its color changes from ..... to .....
2. ..... gas is released when all types of fossil fuel are burned.
3. Combustion is accompanied by the emission of ..... and ..... .

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

3- A) Give a reason for:

1. Condensation process is an exothermic process.

.....

.....

2. Fires in frying pans are extinguished by covering them with a metal lid.

.....

B) What is meant by ...?

1. Endothermic reactions

.....

.....

2. Ignition point

.....

.....

3. Net force

.....

.....

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D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

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SCIENCE

إجابات نماذج اختبارات الأضواء

لشهـــر مارس

الصف 2 الإعدادى

الفصل الدراسى الثانى

موقع الدكتور محمد رزق معلم الكيمياء التعليمي D.M.RAZK

1- A) Complete the following sentences:

1. In chemical reactions, the process of breaking bonds represents an ..... endothermic ..... reaction, while the process of the forming new bonds represents an ..... exothermic ..... reaction.
2. Luminous insects emit light from the abdominal area as a result of an ..... exothermic reaction ..... occurring inside their bodies.

B) Give a reason for:

1. When anhydrous lithium chloride dissolves in water, the temperature of the water rises.
   - Because the dissolution of anhydrous lithium chloride in water is an exothermic process, accompanied by a rise in the temperature of the solution.
2. Water is not used in extinguishing petroleum oil fires.
   - Because petroleum oil floats on the surface of water due to its lower density compared to water, which leads to the spread of fires instead of extinguishing them.
3. The bag placed on the table remains stationary unless someone moves it from its place.
   - Because a stationary object remains at rest unless an external unbalanced force acts on it and changes its state of rest, according to Newton's first law.

2- A) Answer the following questions:

1. What is the importance of self-heating cans?
   - Warming coffee or heating the foods inside them.
2. The ignition point of substance (X) is 45˚C and the ignition point of substance (Y) is 300˚C. **Which substance ignites faster? Explain.**
   - Substance (X) ignites faster than substance (Y) because it has lower ignition point and its flammability increases.

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

B) Choose the correct answer:

1. Which of the following represents an endothermic process?

a) Condensation. b) Melting. c) Freezing. d) Deposition.

2. A person tries to push a box with a mass of 40 kg across a rough horizontal surface, but he is unable to do so, the net force acting on the box is equal to ..... .

a) zero b) 20 N c) 40 N d) 500 N

3. Reaction of metals with dilute acids is similar thermally to ..... .

a) melting ice b) water evaporation

c) Thermite reacion d) Sublimation of iodine

3- A) Give an example of each:

1. Biofuel.

- Ethanol.

2. endothermic reaction.

- reaction between sodium bicarbonate with dilute acids.

B) What happens…?

1. To the flask and piece of wood when mixing barium hydroxide with ammonium chloride.

- The water between the flask and the piece of wood freezes, causing them to stick together.

2. When a collision occurs between two moving objects having the same mass and the same speed in opposite directions.

- Both will move in opposite directions at the same velocity.

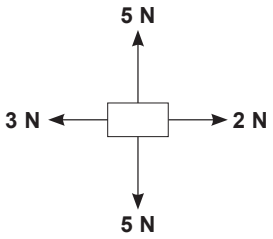
3. Adding drops of Glycerine to potassium permanganate powder.

- A spontaneous exothermic reaction occurs, resulting in the emission of smoke and the formation of a purple-colored flame.

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

1- A) Choose the correct answer:

1. From the opposite figure, the net force ..... .



a) balanced equal 1 N

b) unbalanced equal 5 N to the right

c) balanced equal 5 N

d) unbalanced equal 1 N to the left

2. When (1 g) of lithium chloride dissolves in water, the initial temperature T1 is 21˚C and the final temperature is 25.5 ˚C, what is the amount of ΔT when (2g) is dissolved in the same amount of water?

a) 5.4 ˚C b) 9 ˚C c) 3.5 ˚C d) 52.2 ˚C

B) What happens when…?

1. The bond energy of the molecules of the reactants increases. **(In terms of bond breaking)**
   - Bond breaking becomes more difficult because it requires more absorbed energy.
2. Passing the hot freon gas through the pipe network located behind the refrigerator.
   - It cools down turning into liquid again.
3. Adding water droplets to anhydrous cobalt chloride. **(Regarding: color change)**
   - It changes from blue to pink hydrated cobalt chloride.

2- A) Answer the following questions:

1. Calcium oxide reacts with water, according to the following thermochemical equation:

$$(CaO + H_2O \longrightarrow Ca(OH)_2 + Heat)$$

a) **What is the type of reaction (endothermic or exothermic)? Explain.**
   - Exothermic reaction / Because it is accompanied by the release of thermal energy to the surroundings.

b) **Which is greater:** the absorbed energy during breaking bond or the released energy during forming bonds?
   - The released energy during the formation of product bonds.

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

2 Identify the odd item, then state the connection between the others:

1) Natural gas – Ethanol – Coal – Petroleum oil.

- Ethanol / They are fossil fuels.

2) Sodium hydroxide – Sodium carbonate – Sodium bicarbonate – calcium chloride.

- Sodium bicarbonate / They release heat during their dissolution in water.

3) Fuel – Oxygen – Water – Heat.

- Water / They are from the fire triangle.

3- A) Study the opposite reaction, then determine:

$$Mg + CuO \xrightarrow{\Delta} MgO + Cu$$

1 the oxidizing agent.

- the oxidizing agent is CuO.

2 the reducing agent .

- reducing agent is Mg.

B) Give a reason for:

1 Rushing the bus passengers forward when the bus stops suddenly.

- Because of the inertia of the passengers which makes them resist the sudden change that occurs when pressing brakes.

2 Difference in colors of Bunsen flame.

- Due to the difference in the amount of oxygen mixed with the fuel.

3 Iron produced from the thermite reaction is in the form of melting iron.

- Because it is an exothermic reaction and it is accompanied by the release of enough thermal energy to melt the iron.

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

1- A) Put (✓) or (✗):

1. The temperature of the oxyacetylene flame reaches 2000˚C and is used for cutting metals. (✗)
2. Anhydrous substances change into hydrated substances by heating. (✗)

B) Give a reason for:

1. Mass is a scalar physical quantity.
   - Because it is defined by its magnitude only.
2. When a matchstick is struck against a rough surface, it ignites.
   - Because friction generates the heat necessary to start an exothermic chemical reaction.
3. When barium hydroxide powder is added to ammonium chloride powder, the temperature of the surroundings decreases.
   - Because it is an endothermic reaction accompanied by the absorption of thermal energy from the surroundings, leading to a decrease in their temperature.

2- A) What happens when...?

1. Inserting a copper rod and a zinc rod that are connected to the LED bulb into a lemon.
   - A chemical reaction between zinc and the lemon juice produces electricity, which lights the bulb.
2. Passing a stream of hydrogen gas over black copper oxide with heating.
   - A reddish-brown copper element is formed.

B) Correct the underlined word:

1. In the opposite reaction $2Mg + O_2 \longrightarrow 2MgO$, oxygen acts as a reducing agent. (magnesium)
2. In drones, the downward push of air from the engines represents the reaction force. (action force)
3. The self-heating cans contain calcium hydroxide and water. (oxide)

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

3- A) Mention the importance or use of each of the following:

1. Instant hot compresses

- They relieve pain associated with muscle strain.

2. Thermite reaction

- Melting and welding metals.

B) Answer the following questions:

1. **What is meant by:** Heat of dissolution?
- It is the amount of heat absorbed or released when dissolving a specific quantity of solute in a known volume of solvent to form a solution.

2. **Look at the opposite figure, then answer:**

(A) (B)

Which of these candles will go out first? Explain.
- Candle (B) will go out first, because candle (A) burns for a longer time due to the abundance of oxygen.

3. A net force acted on an object with a mass of 5 kg, causing it to move with an acceleration of 2 m/s^2. **Calculate the net force.**
- $F = m \times a = 5 \times 2 = 10$ N.

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

1- A) Write the scientific term:

1. The property of objects maintaining their state of rest or motion unless acted upon by external forces. (Inertia)
2. The ignition of materials without the presence of an external source of heat. (Spontaneous combustion)

B) first: What is the meant by...?

1. Law of conservation of energy.
   - Energy is neither destroyed nor created, but it can be transformed from one form to another.
2. Reduction process.
   - A chemical process in which the percentage of oxygen decreases in the substance or the percentage of hydrogen increases in it.

second: What is the importance of :the seat belt in the car?

- reduce the rushing forward of the driver towards the steering wheel or windshield during sudden stopping.

2- A) Give a reason for:

1. When diluting concentrated sulphuric acid, the acid is dripped onto the inner walls of the water container.
   - Because the water absorbs the released heat without causing damage.
2. The motorcycle rider is rushed forward when motorcycle collides with a barrier.
   - Due to the inertia.

B) Complete the following sentences:

1. .....Exothermic..... reactions release heat energy, while .....endothermic..... reactions absorb energy.
2. The mixture of propane and .....butane..... is known as butagas.
3. .....Mass..... and .....force..... are factors that affect the acceleration of a moving object.

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

3- A) What happens when….?

1. The net force acting on an object is doubled and its mass is decreased to half. **(in terms of acceleration)**

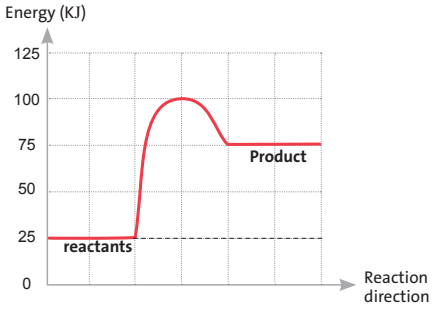
- The acceleration increases to 4 times its value.

2. Water is used in extinguishing of petroleum oil fires.

- Spreading of the fire causing severe damage.

B) Answer the following:

1. **Look at the opposite figure, then answer:**



a) What is the type of this reaction according to thermal changes?

- Endothermic reaction.

b) Calculate the amount of energy released during the formation of products.

- Released energy during product formation = 100 - 75 =25 KJ.

2. **Compare between:** Exothermic dissolution and endothermic dissolution. **(in terms of: definition – give one example)**

Points of comparison	Exothermic dissolution	Endothermic dissolution
Definition	It is a physical change accompanied by the release of thermal energy to the surroundings when a substance dissolves in water.	It is a physical change accompanied by the absorption of thermal energy from the surroundings when a substance dissolves in water.
Example	Dissolution of Sodium hydroxide in water.	Dissolution of Ammonium nitrate in water.

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

1- A) Put (✓) or (✗):

1. Hydrated copper sulphate is bonded with 6 water molecules. (✗)
2. The process formation of new bonds in products needs absorption of energy. (✗)

B) Mention the importance of...:

1. Instant cold compresses.
   - They are used to reduce the severity of swelling.
2. Spark plugs.
   - They produce a spark used to ignite the mixture of gasoline and air in the combustion chamber of the car engine during starting.
3. Fire extinguishers.
   - They put out fires quickly.

2- A) Answer the following questions:

1. In the opposite reaction: $PbO_2 + 2H_2 \longrightarrow Pb + 2H_2O$

   Identify the oxidizing agent and the reducing agent in this reaction.

   - The oxidizing agent is PbO_2.
   - The reducing agent is H_2.

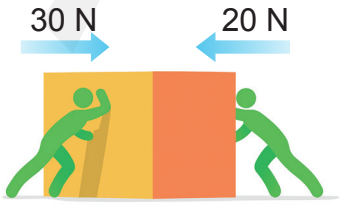
2. **Look at the opposite figure, then answer:**

   a) Determine the type of force acting on the box (balanced - unbalanced)?

   - unbalanced force.

   B) Calculate the net force?

   - 30- 20 = 10N



B) Complete the following sentences:

1. When hydrated copper sulphate is heated, its color changes from ..... blue ..... to ..... white .....
2. ..... Carbon dioxide ..... gas is released when all types of fossil fuel are burned.
3. Combustion is accompanied by the emission of ..... heat ..... and ..... light ..... .

D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

3- A) Give a reason for:

1. Condensation process is an exothermic process.
   - Because when a gas changes into a liquid, the particles lose heat energy to the surroundings.
2. Fires in frying pans are extinguished by covering them with a metal lid.
   - To isolate oxygen, which extinguishes the flame.

B) What is meant by ...?

1. Endothermic reactions
   - They are reactions that require the absorption of thermal energy from the surroundings, causing a decrease in the temperature of the surroundings.
2. Ignition point
   - It is the temperature at which the material begins to ignite.
3. Net force
   - It is the total force in magnitude and direction resulting from the effect of a number of forces acting on an object.

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D.M.RAZK موقع الدكتور محمد رزق معلم الكيمياء التعليمي

موقع الدكتور
محمد رزق
التعليمي

امسح الباركود بالموبيل لتثبيت
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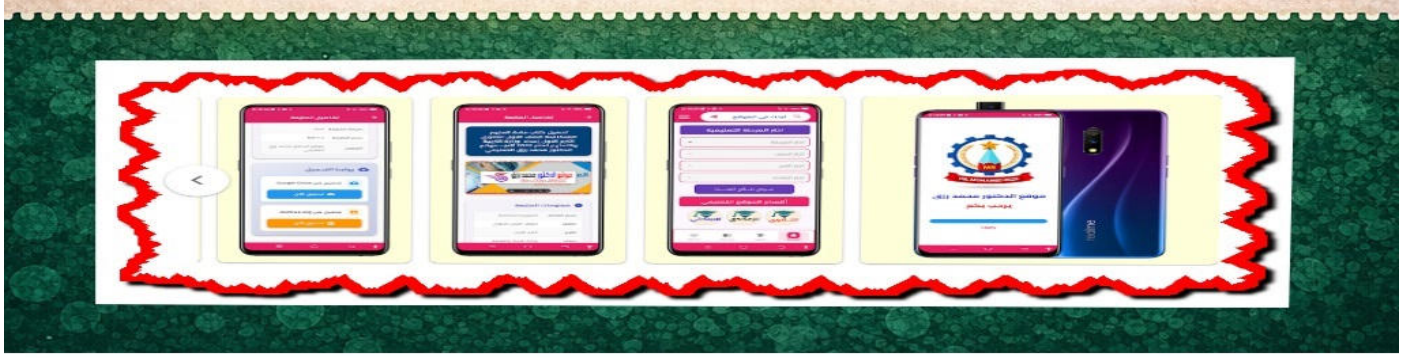

موقع الدكتور محمد رزق
Dr.MoRizK